REVIEW ARTICLE

DELUSIONAL PARASITOSIS

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Delusion parasitosis is a psychiatric disorder in which patient firmly believes that his or her body is infested with an external organism They believe that parasites ,bacteria or worms have entered their body[1]. Patient often complaint of tingling or biting sensation resulting from the movement of these parasites[2]. There is no medical evidence for this infestation[3]. Patients conviction remains un affected despite repeated reassurances.

They use different remedies to get rid of this infestation including oral and topical medication and sometimes knifes or germicidal agents. As a result, these patients may present to accident and emergency departments with self induced injuries, excoriations, ulcerations often complicated by secondary infections[4,5]. Many patients will try to sample the pathogen. Examination of brought sample with a microscope usually reveals cutaneous debris or strings, lint, plant material, or insects. This presentation is called the matchbox sign, or "Saran-wrap sign[6-8].

These patients need detailed assessment for confirming diagnosis and ruling out any medical or psychiatric comorbidity. This condition is not associated with cognitive impairment, any systemic disease or skin disease. Physical examination may only reveal linear erosions with crusts, prurigo nodularis, and/or ulcers[3].

Savely et al has used the term Morgellon disease to describe a condition characterized by fibers attached to the skin. it is another presentation of delusional parasitosis[9]. These patients visit many doctors including dermatologist, physicians and surgeons etc to find a cure of their illness. A high percentage of these patients become fed up and try to commit suicide. Some studies show that 8 to 20 percent of patients suffering from delusional parasitosis may develop suicidal ideation[10,11,12].

The most important step in treating these cases is to establish a therapeutic alliance witness patients. Delusional parasitosis must be differentiated from other organic disorders. Endocrine, hepatic or renal disorders may mimic the symptoms of delusional parasitosis. Other conditions that must be ruled out while diagnosing delusional parasitosis include schizophrenia, psychotic depression, tactile hallucination secondary to substance misuse, obsessive compulsive disorder, trichotillomania and dermatitis artifacta.

When delusional parasitosis result from medical or psychiatric cause it is called secondary psychosis and when it is not preceded by any organic or functional disorder it is called primary disorder. Therefore, when a patient presents with symptoms of delusional parasitosis it is important to rule out any other underlying disorder, cause, or medication that may result in these symptoms[14].

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PREVALENCE

Exact prevalence of Delusional parasitosis is unknown but studies have shown it to be 0.14 to 4.2. Incidence rate is 1.9[1].Delusions of parasitosis appear to be more common in whites than in people of other races. Delusions of parasitosis occur primarily in white middle-aged or older women, although the condition has been reported in all age groups and in men. The female-to-male ratio is approximately 2:1. More specifically, this ratio is 1:1 in people younger than 50 years and 3:1 in those older than 50 years[14,15].

COMORBIDITY

According to Trabert , 60% of the delusional parasitosis patients suffer from psychiatric comorbidity 16. In another study psychiatric comorbidity was present in 76% of cases. Depression was the most common disorder .It was present in 24% of cases. Other disorders are anxiety disorders (19%), drug misuse disorders (19%) and personality disorders (4%)[8].

PATHOPHYSIOLOGY

The exact cause of delusions of parasitosis remains unknown. However it is thought to be caused by neuro-chemical abnormalities. This theory is supported by induction of psychotic symptoms associated with psychoactive agents use. Drugs like amphetamines, cocaine, and methylphenidate can cause psychosis. The Dopamine transporter plays vital role in dopamine-reuptake in the brain, especially in the striatum. Huber at al , proposed that decreased striatal dopamine transporter functioning along with increased extracellular dopamine level contribute to the development of delusional parasitosis[7]. The role of dopamine transporter in causing delusional parasitosis is supported by many studies showing that drugs such as cocaine,

and amphetamines that inhibit the dopamine transport can induce delusional parasitosis[7].

A structural MRI (sMRI) study showed distortions in the dopaminergic innervated dorsal striatum/putamen, especially in patients with delusional parasitosis secondary to organic cause. Most of these patients also showed generalized brain atrophy. Another structural MRI study suggested prefrontal, temporal, parietal, insular, thalamic, and striatal dysfunction in delusional parasitosis patients versus controls[17,18]. Grey matter volume abnormalities were similar between different causes of DI, but white matter volume abnormalities were restricted to cases relating from organic cause[19,20].

A autopsy study in a patient with delusional parasitosis secondary to a hypophyseal tumour showed thalamo-cortical disconnection as the cause[21,22].

In another MRI study patients suffering from schizophrenia with somatic delusions and hallucinations compared to healthy controls, and showed structural differences in grey and white matter of the fronto-thalamic region in schizophrenia patients with somatic delusions compared to schizophrenia patients without somatic delusions and controls[34]. Similarly , neuro-imaging studies in patients suffering from itching and skin manipulation show abnormal activity of striato-thalamo-orbitofrontal regions[23-25]. Therefore, the proposed neurobiological model of DI consists of a disrupted medial prefrontal control over somato-sensory representations[7,26].

Treatment

These cases need detailed assessment for confirming diagnosis and ruling out any medical or psychiatric comorbidity [3]. Establishing therapeutic relationship with patient is the most important step in treating patients with delusional parasitosis. These patients visit many doctors before coming to a psychiatrist. They feel that these doctors did not pay sufficient attention to their complaints and lose confidence in the therapeutic advice that they receive . Therefore establishing a strong doctor-patient relationship is vital

Pharmacotherapy is the main stay in treating such cases. Pimozide is the drug of choice for treating delusional parasitosis. A double-blind randomized, placebo-controlled crossover trial assessed effects of pimozide in 11 patients suffering from delusional parasitosis was superior compared to placebo for itch , but not for feelings of vermin or excoriations[27]. similarly Generali & Cada show improvement of delusional parasitosis symptoms with pimozide[28]. According to a more recent survey, British dermatologists still prefer pimozide, and prescribe neuroleptics to one third of their delusional parasitosis patients[29].

Although pimozide is an effective antipsychotics it is associated with higher risk of producing extra pyramidal side effects, and prolongation of the QT-interval compared to atypical or second generation antipsychotics[30]. Therefore it should be avoided in patients with previous history of neuroleptic sensitivity. Therefore, patients with movement disorders should be treated with second-generation antipsychotics. case reports/series with second-generation antipsychotics such as risperidone, olanzapine, quetiapine, sertindole, and paliperidone for the treatment delusional parasitosis patients have been published[2,31,33].

One such study used dopaminergic neuroimaging techniques in two patients of delusional parasitosis before and after treatment with atypical antipsychotic medication, and showed that effective treatment was associated with blocking of 63 to 78% of striatal D2 receptors as well as glucose metabolism changes in the thalamus[7].

There is very limited research comparing efficacy and dose needed for various antipsychotics to produce remission in delusional parasitosis.

One follow-up study of patients of delusional parasitosis taking pimozide showed that half of the 14 patients remained in remission 19–48 months after termination of treatment. Four patients did not respond at all, and 3 patients (21%) relapsed[34]. Another study concluded that prolonged treatment with antipsychotic agents is required because one fourth of the patients relapsed within 4 months after stopping medication [35].

Electroconvulsive therapy be effective in small percentage of cases. Addition of antidepressants such as citalopram to clozapine in a women with delusional parasitosis and refractory schizophrenia may prove beneficial[36,37].

Cognitive behavioral therapy (CBT) is also helpful in treating symptoms of delusional parasitosis. In this technique fixed beliefs therapist help question their fixed beliefs, make connections between their thoughts, emotions, and behaviours. The aim of CBT is to achieve remission and improve their social functioning[38-40].

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